



April 13, 2020

The Honorable Eddie Bernice Johnson
Chairwoman
U.S. House of Representatives
Committee on Science, Space,
and Technology
2321 Rayburn HOB
Washington, DC 20515

The Honorable Frank Lucas
Ranking Member
U.S. House of Representatives
Committee on Science, Space,
and Technology
2321 Rayburn HOB
Washington, DC 20515

Dear Chairwoman Johnson and Ranking Member Lucas,

We are grateful for the opportunity to respond to the Committee's request for information related to additional resources needed for short- and long-term activities to address and mitigate the impacts of the current COVID-19 crisis.

The impact of COVID-19 on public universities has placed immense stress on students, faculty, staff, and institutional finances. As employers of 2.3 million faculty and staff and as institutions that are educating and preparing 19.4 million students to be part of the workforce of tomorrow, our nation's public colleges and universities sit in a unique situation as they grapple with the massive financial fallout from COVID-19. And, as enterprises conducting \$52.8 billion in research, public research universities play a key role in identifying cures, developing new technologies, and ensuring the needs of their communities are met.

As the Committee is aware, much of the nation's non-COVID-19 related academic research is currently shuttered. Bioscience labs and other units on many campuses have worked quickly to shift focus to COVID-19 or to energize existing work that can have an impact.

As just a few of many examples, a team at the University of North Carolina at Chapel Hill is [testing](#) a new antiviral drug that is showing early promise in fighting the disease. Researchers at the University of Texas at Austin [created](#) the first 3-D map of the coronavirus cell, a critical step for developing a vaccine. Oklahoma State University quickly partnered with OSU Medicine in Tulsa to convert an animal disease testing lab into a certified [human testing facility](#) for COVID-19, providing much-needed support to diagnose patients and support the tracking of the virus by state public health officials. The University of Pittsburgh has [developed](#) a COVID-19 vaccine that's showing early promise. As supplies of personal protective equipment for healthcare workers run low, University of Wisconsin engineers are working with local manufacturers to [create](#) medical face shields with 3D printing to minimize the risk of those working to save lives. Rutgers University stood up an entire [center](#) to coordinate its research, public health, and community outreach efforts around COVID-19. And Northern Illinois University is mobilizing to help local businesses address the most urgent challenges they now face as a result of the coronavirus.

In a [letter](#) submitted to Congressional leaders on April 7, APLU, along with several other higher education associations, advocated for \$26 billion in supplemental appropriations for federal research agencies in order to help sustain our scientific research workforce and laboratories through the major disruptions caused by the COVID-19 pandemic. Continuing salary, benefits, stipends, and tuition support for graduate students, postdocs, principal investigators, and other research personnel and technical staff funded by federal research grants is critical to sustaining our research enterprise.

Below are near-term needs as well as longer-term projects and programs that would help stimulate our economy by creating jobs, new knowledge, and innovations.

Opportunities for Additional COVID-19 Response and Recovery

The higher education community is appreciative of the regulatory flexibilities federal research agencies have provided to grantees to continue compensation and provide no cost extensions for work that has been disrupted by campus closures. However, the pandemic continues to disrupt the research enterprise and further impact the ability of researchers to adequately complete current grant work. We request the Committee to encourage agencies to adopt greater uniform implementation of regulatory flexibilities and to provide supplemental funding to provide “cost extensions” to support the additional salary for staff and students and to ramp up their work again when they are able to resume lab operations. To ease the burden on agency staff, we recommend either automatic supplemental cost extensions on existing grants or minimal application criteria.

We request the Committee encourage agencies to allow for more time to respond to grant applications, requests for information, other solicitations, and new regulation implementation. We are particularly concerned about the potential impact of campus shutdowns and stay at home orders on young faculty, who may have significantly increased caregiving responsibilities at this time of national crisis.

APLU urges the Committee to consider supporting administrative supplements to existing grants in situations where personal protective equipment (PPE) from a research lab has been donated to hospitals or other entities to combat COVID-19. Front line healthcare is certainly the priority. The Office of Management and Budget (OMB) released [M-20-20](#) on April 9, which allows grant recipients the ability to donate medical equipment purchased with federal grants to entities serving the public for COVID-19 response. However, universities may not have the resources to replace donated PPE without federal assistance. When researchers and labs begin to ramp back up, this PPE will need to be replaced to ensure the safety of researchers and labs. Not only is this equipment required for many types of research, as universities work to bring research back online, more PPE may be needed as lab operations may change to accommodate new public health work safety recommendations, and initial grant budgets may not have included the need for the additional equipment.

APLU is also very concerned with the impact that COVID-19 will have on our undergraduate and graduate student populations hoping to pursue STEM careers. Undergraduate research

experiences, and graduate fellowships and traineeships are all impacted by university campus closures, lab accessibility, and uncertainty about fall semester campus operations. Many campuses have already had to make difficult decisions to cancel summer Research Experiences for Undergraduates (REU) programs supported by federal research agencies. We urge the Committee to support increasing funding for REUs for FY 2021 so more undergraduate students can participate. These experiential learning opportunities are often an important pathway for students interested in graduate programs and STEM research careers.

Graduate students and post-docs are likely to face a difficult job market, with many public institutions already announcing mandatory hiring freezes. We must ensure that we continue to cultivate our STEM talent pipeline through federally funded graduate opportunities at the agencies under the Committee's jurisdiction. We also urge the Committee to look for innovative partnerships, perhaps with industry and other mechanisms, to extend graduate fellowships, traineeships, and post-doc opportunities across the federal agencies so they can weather this difficult economic time.

Regarding grant funding opportunities, we are grateful for the \$75 million included in the Coronavirus Aid, Relief, and Economic Security (CARES) Act for NSF RAPID grants. With these funds, researchers are working to identify the emergence of pathogens, transmission dynamics, pandemic modeling, supply change and logistics, manufacturing, telehealth security and privacy, societal impact and behavior, testbeds for digital health technologies development, wireless technology advancement, and STEM workforce needs. We request additional funds through the RAPID grant mechanism to continue the important work researchers are doing to combat COVID-19. We also urge NSF to raise the \$200,000 cap on RAPID grants to allow for more robust proposals. We also recommend that NSF continues to receive adequate funding to support the administrative needs at the Agency to quickly and efficiently distribute the funds made available.

We recommend that with increased funding to the program, RAPID grants are expanded to cover a larger pool of research topics. These could include:

- a) research on and production of effective practices for online undergraduate STEM learning due to the massive expansion of online STEM education that has resulted from COVID-19,
- b) behavioral research related to COVID-19 impacts,
- c) and, potentially for both NSF and other agencies, the impact of COVID-19 on transportation, pollution levels in the atmosphere, and other climate-related questions.

Increased support for Early-Concept Grants for Exploratory Research (EAGER) would also be helpful to support innovative thinking related to COVID-19 challenges.

Research Infrastructure and Long-term Economic Stimulus

APLU encourages the Committee to consider new investments in research infrastructure vital to addressing the pandemic. This investment will also bolster our nation's overall research capabilities and competitiveness for years to come. We support the expansion of current infrastructure programs such as NSF's Mid-Scale Research Infrastructure 1 and 2 programs. Demand for this program is high and may likely be even higher due to needed upgrades and

potential repairs to existing infrastructure that may have been unattended to during the mandatory shutdown of many labs and facilities due to COVID-19.

We also advocate for investment in the Department of Energy's (DOE) Office of Science-supported scientific infrastructure at the national laboratories and university research facilities to further enable scientific breakthroughs and discoveries while creating construction jobs and helping to stimulate the economy. Federal investment in the construction and maintenance of world-class user facilities and instruments supports researchers from academia, industry, and federal agencies and helps to maintain U.S. scientific leadership. DOE high-performance computers and other facilities are currently being tapped to help look for therapeutics to treat COVID-19.

We also urge the Committee to reinvigorate an infrastructure program at the National Institute of Standards and Technology (NIST) that funds competitive construction grants for research science buildings at our nation's universities. In 2009, NIST provided funding for new and updated laboratory facilities at institutions of higher education for areas of research such as fundamental physics, nanotechnology, aquaculture, and marine ecology research. To spur economic activity and maintain our global competitiveness across multiple disciplines, we recommend an infusion of infrastructure funding to maintain and drastically upgrade research infrastructure at universities. Recognizing the likely negative impact on state revenue due to COVID-19, APLU urges the Committee to seriously consider minimal to no-cost share requirements for infrastructure projects.

Coupled with building infrastructure needs, our community would benefit from continued support for vital instrumentation through programs such as NSF's Major Research Instrumentation (MRI) Program. The MRI program funds critical research instrumentation without which advances in fundamental science and engineering research would likely not otherwise occur. As Congress looks towards a potential infrastructure stimulus package, we urge members to consider the cost of updating lab equipment essential to conducting groundbreaking research and the personnel vital to carrying out research and maintaining state-of-the-art facilities.

To maintain our robust scientific ecosystem and stay globally competitive, our nation must also increase investments in crucial research agencies such as NSF, DOE, National Aeronautics and Space Administration (NASA), NIST, National Oceanic and Atmospheric Administration (NOAA), and others. Many research agencies currently receive a high volume of very promising proposals that they are unable to fund. Now is the time to invest and unleash the innovative power of the U.S. research enterprise.

We encourage the Committee to support increased appropriations for research agencies under its jurisdiction. Research grant funding does not just benefit institutions and researchers. The Institute for Research and Innovation Science at the University of Michigan estimated that in FY 2018-2019 all U.S. universities spent nearly \$14 billion in direct cost research dollars on good and services in all 435 congressional districts to support on campus research activities. Discoveries from basic and applied research also leads to a healthier, safer, and more prosperous nation.

The unknown duration of the COVID-19 crisis, coupled with the simultaneous tightening of budgets from non-federal sponsors, including state governments, foundations, private industry, and others, is likely creating long-term challenges to the U.S. research capacity. We urge the Committee to support research personnel and invest in needed research infrastructure to help the nation not only respond to the current crisis but help us prepare for future challenges.

Thank you for considering our community's views and recommendations. We look forward to our continued partnership. If you have questions, please contact, [Debbie Altenburg](#), APLU's Assistant Vice President for Research Advocacy and Policy.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter McPherson". The signature is fluid and cursive, with the first name "Peter" and last name "McPherson" clearly distinguishable.

Peter McPherson